

Roland

ACOUSTIC TRIGGER INTERFACE

AT-4

Owner's Manual



For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

For Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

ACOUSTIC TRIGGER INTERFACE AT-4

(Gerät, Typ, Bezeichnung)

Dem Zentralamt für Zulassungen im Fernmeldewesen wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf die Einhaltung der Bestimmungen eingeräumt.

Roland Corporation

in Übereinstimmung mit den Bestimmungen der BMPT-AmtsblVfg 243/1991 funk-entstört ist. Der vorschriftsmäßige Betrieb mancher Geräte (z. B. Meßsender) kann allerdings gewissen Einschränkungen unterliegen. Beachten Sie deshalb die Hinweise in der Bedienungsanleitung.

4-16 Dojimahama 1-Chome Kita-ku Osaka 530 Japan
.....
(Name und Anschrift des Herstellers/Importeurs)

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.

For Canada

CLASS B

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

NOTICE

CLASSE B

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Règlement des signaux parasites par le ministère canadien des Communications.

AVIS

Preface

Thank you for purchasing the Roland AT-4 Acoustic Trigger Interface.

The AT-4 is an interface box which allows control signals from acoustic trigger pickups to directly control devices such as the Roland TD-7 or SPD-11. By using the AT-4 in conjunction with acoustic trigger pickups, you can control a TD-7 or SPD-11 while retaining the musical nuances of the performance.

In order to take full advantage of the AT-4's functions and enjoy years of trouble-free service, please read this manual carefully.

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What is an Acoustic Trigger Pickup?

An acoustic trigger pickup is a transducer which outputs a trigger signal indicating the force with which an acoustic drum is struck. Acoustic trigger pickups are commercially available for attachment to drum heads, shells or rims.

What is the AT-4?

In comparison to dedicated electronic drum pads (eg., Roland's PD-7s: sold separately), the output level produced by acoustic trigger pickups is low and the output signal is irregular. If such acoustic trigger pickups are connected directly to a TD-7 or SPD-11, the musical nuances of the acoustic drum will be lost. This is why the AT-4 Acoustic Trigger Interface was developed. The AT-4 adjusts the output signal from the acoustic trigger pickup so that it will be suitable for input into a TD-7 or SPD-11, thereby allowing you to fully utilize the musical expressiveness of an acoustic drum.

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Important notes

When using an AC adaptor, use only the specified device (BOSS PSA-series). Use of any other AC adaptor could result in damage, malfunction or electric shock.

(Power Supply)

- Before connecting this unit to other devices, turn off the power to all units; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise; an electric motor or variable lighting system for example.
- The power requirement for this unit is indicated on its nameplate (rear panel). Ensure that the voltage in your installation meets this requirement.
- Avoid damaging the power cord: do not step on it, place heavy objects on it, etc.
- INPUT 1 functions as a power switch. Disconnect the cable from INPUT 1 whenever the unit is to remain unused.
- When disconnecting the AC adaptor from the power outlet, grasp the plug itself; never pull on the cord.
- If the unit is to remain unused for an extended period of time, unplug the power cord.
- When installing or replacing a battery, refer to "Changing the battery" (page 7).

(Placement)

- Do not subject the unit to temperature extremes (eg., direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas, or areas that are subject to high levels of vibration.
- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.

(Maintenance)

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

(Battery)

- Remove the battery whenever the unit is to remain unused for an extended period of time.
- If there is a battery in the unit while an AC adaptor is being used, normal operation will continue should the line voltage be interrupted (power blackout or power cord disconnection).
- The battery will last for approx. 2 hours(Carbon) or 8.5 hours(Alkaline) . The use of an alkaline battery is recommended for a long time performance.
- When operating solely on a battery, the POWER indicator becomes dim when the battery is depleted. Replace the battery immediately.

(Additional Precautions)

- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.
- Should a malfunction occur, or if you suspect there is a problem, discontinue use immediately. Contact qualified service personnel as soon as possible.
- To avoid the risk of electric shock, do not open the unit.

Front and rear panels

Front



POWER indicator

This indicator lights when a plug is inserted into INPUT 1, indicating that the unit is operating.

* This indicator also functions as a battery check; if the indicator becomes dim or does not light at all, please install a new battery. (See p.7)

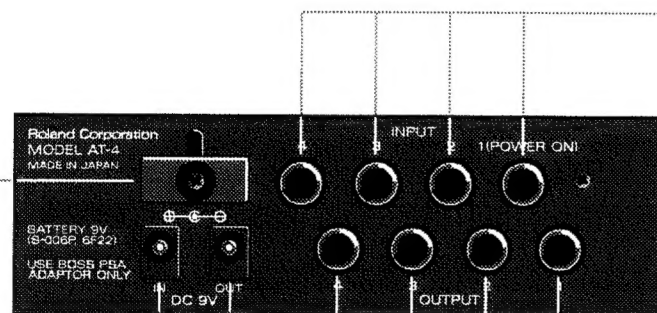
SENSITIVITY knobs (1-4)

These knobs adjust the sensitivity of the connected acoustic trigger pickups.

Rear

Cable hook

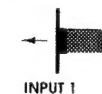
Wrap the AC adaptor cable (or the DC cable) around this hook to prevent the plug from being accidentally disconnected.



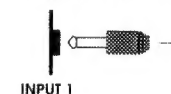
INPUT jacks (1-4)

Connect acoustic trigger pickups to these jacks. INPUT 1 also functions as a power switch. (The power will turn on when a mono plug is inserted, and off when the plug is pulled out.)

The power is ON.



The power is OFF.



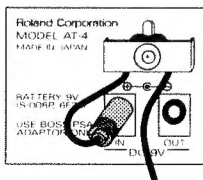
OUTPUT jacks (1-4)

These jacks output the adjusted trigger signals. Connect these jacks to the trigger inputs of the TD-7, or to the EXT inputs of the SPD-11.

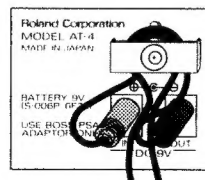
AC adaptor jack (IN, OUT)

An AC adaptor (BOSS PSA- series: sold separately) can be connected to DC IN. If you wish to supply power to another AT-4, connect a DC cable (BOSS PCS-25: sold separately) to DC OUT.

* AC adaptor

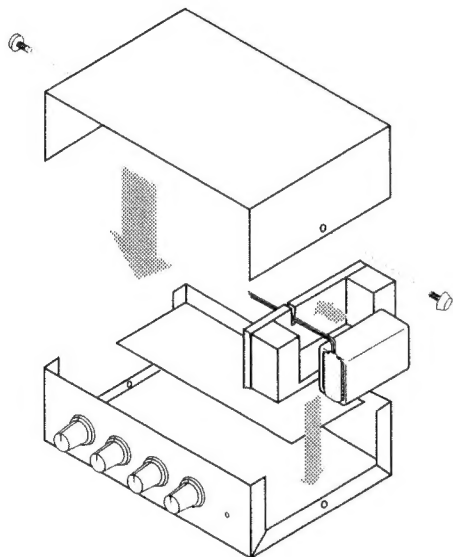


• AC adaptor + DC cable



Changing the battery

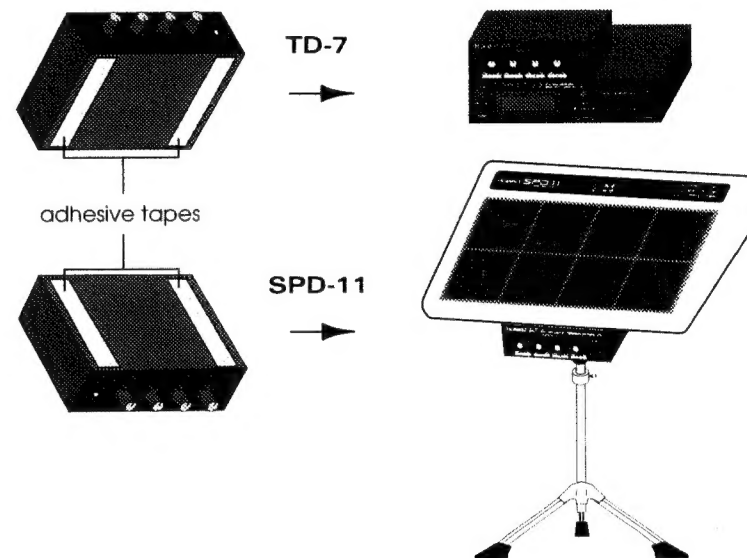
The AT-4 uses one 006P/9V battery.
Remove the two screws from both sides, and insert the battery as shown in the diagram.



*** Make sure that the polarity (+/-) of the battery connector is correct.**

Installing the AT-4

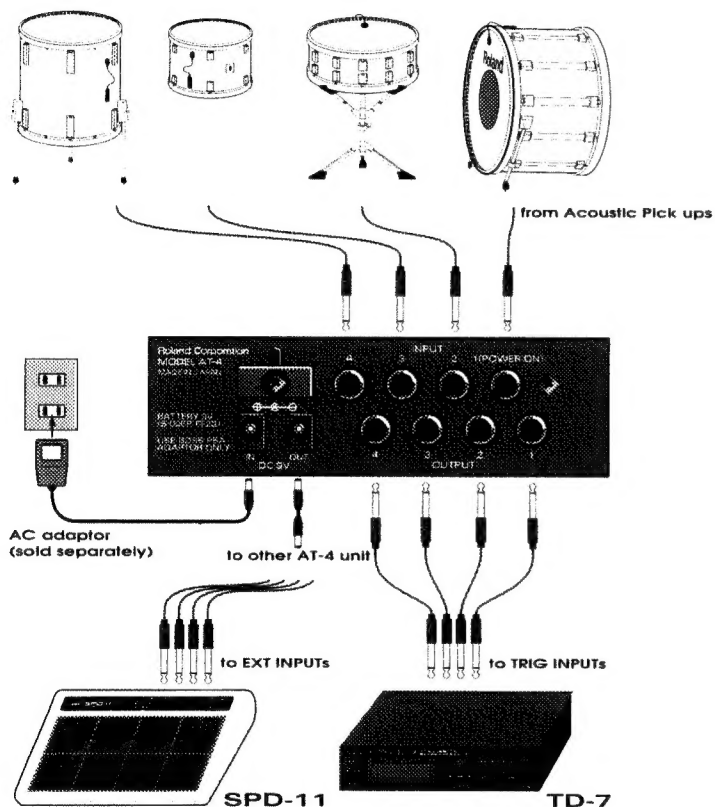
The AT-4 is used in connection with a TD-7 or SPD-11, etc. You can use the zelcro-type tapes included with the AT-4 to attach it to a TD-7 or SPD-11.



*** Be sure the mounting surface is free of dust before you begin.**

1. Connections

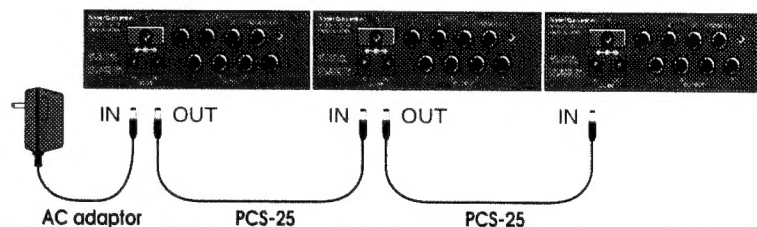
Use mono cables to make connections between acoustic trigger pickups and the AT-4.



* **INPUT 1** also functions as the power switch, so be sure that it is connected when you wish to use the AT-4. (A stereo cable cannot be used.)

- * Before inserting or removing a plug from an INPUT jack, be sure to turn down the volume on the amp/sound system.
- * A trigger signal will be transmitted when the power is turned on, so turn down the volume of the TD-7 or SPD-11 before inserting a plug into INPUT 1.
- * For details on attaching an acoustic trigger pickup to a drum, refer to the manual of the trigger pickup you are using.

By using DC cables (BOSS PCS-25:sold separately) you can use one AC adaptor to provide power to up to three AT-4 units.



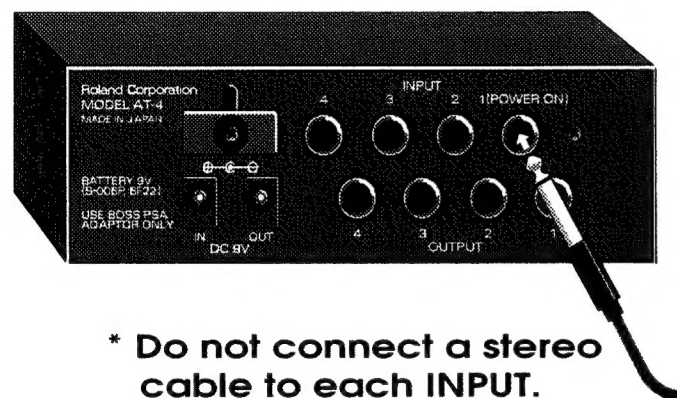
* Never use DC cables to supply power to other products.

•Recommended placement for acoustic trigger pickups (adhesive types)

Drum	Location	Description
Snare drum	batter head	2-3 cm from the rim
Bass drum	batter head	5-10 cm from the upper part of the rim
Tomtom	shell	beside a lug, 2-3cm from the rim of the batter side
Floor tom	shell	beside a lug, 2-3cm from the rim of the batter side

2. Turn on the power

After turning down the volume on the TD-7 or SPD-11, connect a mono cable to INPUT 1 (stereo cables cannot be used). The power will come on, and the POWER indicator will light.



To turn off the power, first turn down the volume of the TD-7 or SPD-11, and then disconnect the cable from INPUT 1.

3. TD-7/SPD-11 settings

For inputs using an acoustic trigger pickup, adjust the trigger parameters to appropriate values using the following settings as a guideline.

TD-7:

Vel Curve	:	Norm 3
Max Dyna	:	8
Min Dyna	:	4
Min Velo	:	1
Mask Time	:	0 ms
Threshold	:	1

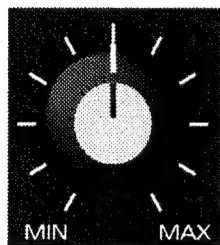
SPD-11:

TRIG SENS	:	6
TRIG THRESHOLD	:	1
TRIG MASK TIME	:	0
TRIG SCAN TIME	:	10

*** You may need to adjust these values depending on the type of acoustic trigger pickups you are using, the location on the drum, and your drum setup.**

4. Adjust the sensitivity

Use the SENSITIVITY knobs to adjust the sensitivity of the acoustic trigger pickups.



*** Sensitivity will increase as each knob is rotated clockwise.**

Adjust the sensitivity so that the dynamics change naturally as you play softly or loudly, and so that there are no differences in level between pickups.

Higher sensitivity settings will give you more detailed control over playing dynamics, but will also mean that 'double triggering' can occur more easily. (Double triggering is when two or more notes are sounded from a single drum stroke.)

If you are unable to make appropriate adjustments using the SENSITIVITY knobs, or if dynamics do not sound natural, adjust the settings of the TD-7 or SPD-11.

• Hints for TD-7/SPD-11 settings

The level is low

- > lower Max Dyna (TD-7)
- > raise TRIG Sensitivity (SPD-11)

Soft strokes produce loud notes

- > raise Min Dyna (TD-7)

Single strokes produce multiple notes (double triggering)

- > raise THRESHOLD (TD-7/SPD-11)

Other drums also sound (crosstalk occurs)

- > raise THRESHOLD (TD-7/SPD-11)

Soft strokes are not detected

- > lower THRESHOLD (TD-7/SPD-11)

Changes in playing dynamics do not affect volume

- > lengthen TRIG SCAN TIME (SPD-11)

• Hints for drum setups

Most problems with double triggering or crosstalk can be eliminated by changing the location of the pickups, adjusting the tuning of the drums or by modifying the drum setup.

If you have problems with double triggering, try changing the location of the pickups. If this does not work, we suggest you mute the drums (i.e., shorten the resonance by damping the drum head with felt, etc.). When the drums are muted, dynamics will also be triggered more accurately. For a snare drum, it is also effective to set the snare wires fairly tight.

If you have problems with crosstalk, change the setting of the drums to separate those which produce crosstalk, or attach them to separate stands (where possible).

Main specifications

AT-4: Acoustic Trigger Interface

• Controls

SENSITIVITY Knobs (1-4)

• Indicator

POWER Indicator (also serves as a battery check)

• Jacks

INPUT Jacks (1-4)

OUTPUT Jacks (1-4)

AC Adaptor Jacks (IN, OUT) (DC 9V)

• Power Supply

Dry Battery (9V)

AC Adaptor : BOSS PSA series

• Current Draw

40 mA

* **Expected battery life** (These figures will vary depending on the actual conditions of use.):

Carbon : approx. 2 hours

Alkaline : approx. 8.5 hours

• Dimensions

154(W) ~ 118(D) ~ 44(H) mm

6-1/16(W) ~ 4-11/16(D) ~ 1-3/4(H) inches

• Weight

460g / 1lb (including battery)

• Accessories

Dry Battery (9V) : BOSS S-006PD/9V (6F22/9V)

Owner's Manual

Zelcro-type Tape (set of 2)

• Options

Dry Battery (9V) : BOSS S-006PD/9V (6F22/9V)

AC Adaptor : BOSS PSA series

DC Cable : BOSS PCS-25

* **The specifications for this product are subject to change without prior notice.**

Information

When you need repair service, call your local Roland Service Station or the authorized Roland distributor in your country as shown below.

U. S. A. Roland Corporation US 7200 Dominion Circle Los Angeles, CA. 90040-3696, U. S. A. TEL: (213) 685-5141	GERMANY Roland Elektronische Musikinstrumente Handels-gesellschaft mbH. Oststrasse 96, 2000 Norderstedt, GERMANY TEL: 040/52 60 090	GREECE V. Dimitriadis & Co. Ltd. 20, Alexandras Avn., GR 10682 Athens, GREECE TEL: 01-8232415	QATAR Badie Studio & Stores P.O.Box 62, DOHA Qatar TEL: 974 423554	KOREA Cosmos Corporation Service Station 261 2nd Floor Nak-Won Arcade Jong-Ro ku, Seoul, KOREA TEL: (02) 742 8844
CANADA Roland Canada Music Ltd. (Head Office) 5480 Parkwood Way Richmond B. C., V6V 2M4 CANADA TEL: (604) 270-6626	FRANCE Musikengro 102 Avenue Jean-Jaures 69007 Lyon Cedex 07 FRANCE TEL: (7) 858-54 60	PORTUGAL Casa Caius Instrumentos Musicais Lda. Rua de Santa Catarina 131 4000 Porto, PORTUGAL TEL: 02-38 44 56	BAHRAIN Moon Stores Bad Al Bahrain Road, P.O.Box 20077 Slate of Bahrain TEL: (0973) 211 005	SINGAPORE Swee Lee Company BLOCK 231, Bain Street #03-23 Bras Basah Complex, Singapore 0718 TEL: 3367886
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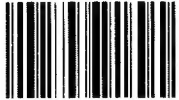
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